

AMENDMENTS TO THE CLAIMS

Please replace all previous versions of the claims with the following listing:

1. (Currently Amended) A process for production of energy in a pulp mill, according to which process a waste liquor of a cellulose pulp digestion liquor is concentrated, and this concentrated liquor is burned in a soda recovery boiler in the presence of biogenic fuels, thermal energy of flue gases obtained from the burning being recovered, wherein at least part of the biogenic fuel used is bark which is produced in the pulp mill in a debarking process, and wherein essentially the entire bark amount produced in said debarking process or other similar wood waste, which is dried to a moisture content below 30% using waste heat of the pulp mill, whereafter at least part of the dried bark is gasified to produce a fuel gas that is fed, at least in part, into the soda recovery boiler substantially continuously during the burning of the concentrated liquor in the soda recovery boiler.
2. (Currently Amended) The process according to Claim 1, wherein the bark ~~or bark residue~~ is dried to a moisture content below 20%, whereafter it is gasified, and at least 40% by volume of the gas thus produced is fed into the soda recovery boiler.
3. (Previously Presented) The process according to Claim 1, wherein ash is separated from the fuel gas before it is fed into the soda recovery boiler.
4. (Previously Presented) The process according to Claim 1, wherein the heat produced using at least a portion of the fuel gas is used for superheating soda recovery boiler steam in a superheating chamber separate from the flue gases of the soda recovery boiler.
5. (Canceled)

6. (Currently Amended) The process according to Claim 1, wherein for the drying of the bark ~~or corresponding wood waste~~ there are used gases substantially having a temperature below 200°C.
7. (Previously Presented) The process according to Claim 6, wherein there is used steam or flue gas having a temperature below 180°C.
8. (Currently Amended) The process according to Claim 1, wherein as the energy for the drying of the bark ~~or other similar wood waste~~ there is used steam having a pressure of 0.1 to 100 bar.
9. (Currently Amended) A process for producing energy in a sulfate pulp mill, according to which process
- wood material used for pulp production is in part digested in cooking liquor to separate fibers from each other,
 - the digested wood material is extracted as black liquor from the separated fibers,
 - the black liquor is concentrated by evaporation, and
 - the concentrated liquor is burned in a soda recovery boiler to regenerate cooking chemicals and to produce heat and electricity by using biogenic fuels, wherein
 - ~~solid biogenic fuel bark is produced in a debarking process in the sulfate pulp mill,~~
 - essentially the entire bark amount is dried using waste heat of the pulp mill and at least part of the bark is brought into a gaseous form,
 - formed ash is separated,
 - a significant proportion of the gas is burned in the same boiler, equipped with heat recovery, as the concentrated liquor, and
 - the gas is burned substantially continuously during the burning of the concentrated liquor in the soda recovery boiler.
10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Currently Amended) The process according to Claim 9, wherein the ~~solid fuel~~bark to be brought into a gaseous form is dried before the gasification to a moisture content of 5 to 40%.

14. (Currently Amended) The process according to Claim 9, wherein the ~~solid fuel~~bark is dried using heat remaining in flue gas formed in the soda recovery boiler after the heat recovery, by bringing the flue gas into direct contact with the solid fuel to be dried.

15. (Currently Amended) The process according to Claim 9, wherein the ~~solid fuel~~bark is dried using as energy steam at a pressure level of 0.1 to 100 bar.

16. (Currently Amended) The process according to Claim 9, wherein the ~~solid fuel~~bark is dried using as energy ~~the surplus heat~~warm water that is present at the pulp mill.

17. (Previously Presented) The process according to Claim 9, wherein a combustion chamber is in the direction of the flow of flue gases divided into two parts, in the first of which there is burned the fuel that has been rendered gaseous, the heat produced therefrom being used to a significant degree for superheating of steam, and in the second part there is burned the concentrated liquor, the heat released therefrom being used primarily for the vaporization of boiler water.

18. (Currently Amended) The process according to Claim 9, wherein a portion of the ~~solid biogenic fuel~~bark that has been brought into a gaseous form is, after the separation of ash, burned in a lime sludge reburning kiln and/or other units where its use replaces the use of fossil fuels.

19. (Currently Amended) An apparatus for producing, from wood bark, a biogenic fuel gas to be fed into a recovery boiler of a pulp mill, the apparatus being connected to a feed unit of the recovery boiler, wherein it comprises as a combination

- a bark-drying unit having feed means for the wood bark to be dried and outlet means for the dried bark, the bark-drying unit being adapted to utilize waste heat of the pulp mill for drying, and
- a dried-bark gasifier for producing fuel gas from the dried bark, the apparatus having feed means for bark and outlet means for fuel gas, the feed means of the gasifier being connected to the outlet means of the drying unit and the gas outlet means being connected to the feed unit of the recovery boiler to feed into the boiler the fuel gas produced from the dried bark by gasification substantially continuously during operation of the boiler.

20. (Previously Presented) The apparatus according to Claim 19, wherein the drying unit comprises at least two separate dryers, which are arranged as a dryer cascade, the outlet means of the dryer subsequent in the series being connected to the feed means of the gasifier.

21. (Previously Presented) The apparatus according to Claim 20, wherein between the first and the second dryer there is arranged a pretreatment unit for treating the bark obtained from the first drier before it is fed into the second drier, the pretreatment unit having a feed unit connected to the outlet means of the first drier and an outlet unit connected to the feed means of the second dryer.

22. (Previously Presented) The apparatus according to Claim 21, wherein the pretreatment unit comprises a grinder.

23. (Previously Presented) The apparatus according to Claim 20, wherein flue gases and/or steam are used for the drying in at least in one of the dryers.

24. (Previously Presented) The apparatus according to Claim 20, wherein the first dryer comprises a bed dryer.
25. (Previously Presented) The apparatus according to Claim 20, wherein the second dryer comprises a fluid-bed dryer.
26. (Previously Presented) The apparatus according to Claim 19, wherein the gasifier is a fluid-bed boiler having an ebullating or rotary bed.
27. (Previously Presented) The apparatus according to Claim 19, wherein the outlet means of the gasifier is connected to a gas purification unit to separate impurities from the fuel gas before it is fed into the recovery boiler.
28. (Currently Amended) The process according to Claim 8, wherein as the energy for the drying of the bark ~~or other similar wood waste~~ there is used steam having a pressure of 2 to 14 bar.
29. (Currently Amended) The process according to Claim ~~43~~ 32, wherein the solid fuel to be brought into a gaseous form is dried before the gasification to a moisture content of 10 to 15%.
30. (Previously Presented) The process according to Claim 9, wherein the solid fuel is dried using as energy steam at a pressure level that is the distribution pressure of the mill's bled steam or back-pressure steam network.
31. (Previously Presented) The process according to Claim 30, wherein the solid fuel is dried using as energy steam at a pressure level of 2 to 14 bar.
32. (New) The process according to Claim 1, wherein flue gas of the soda recovery boiler is used for drying the bark.

33. (New) The process according to Claim 32, wherein the exit fuel gases from the drying of the bark are combined with the flue gases from the soda recovery boiler.

34. (New) The process according to Claim 1, wherein essentially the entire bark amount produced in said debarking process is gasified.

35. (New) The process according to Claim 1, wherein a portion of the bark gas is burned in a lime sludge reburning kiln of the pulp mill.

36. (New) The process according to Claim 1, wherein all of the bark gas is fed into the soda recovery boiler.

37. (New) The process according to Claim 1, wherein warm water present at the pulp mill is used for drying the bark.

38. (New) The process according to Claim 9, wherein flue gas of the soda recovery boiler is used as a drying gas for drying the bark.

39. (New) The process according to Claim 38, wherein the exit gases from the drying of the bark are combined with the flue gases from the soda recovery boiler.

40. (New) The process according to Claim 9, wherein the entire bark amount produced in said debarking process is gasified.

41. (New) The process according to Claim 9, wherein steam is used as a drying gas for drying the bark.

42. (New) The process according to Claim 9, wherein all of the bark gas is fed into the soda recovery boiler.

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43. (New) The apparatus according to Claim 19, wherein the bark-drying unit utilizes warm water present at the pulp mill for drying the bark.